6 OTHER ANALYSIS TOOLS

6.1 IRAF

6.1.1 Entering IRAF

You may invoke IRAF from the CGIS Executive. To do this, choose **`Other Analysis Tools...`** from the **`CGIS Main Menu`**. From this menu, choose **`IRAF`**. Informational messages will appear followed by:

```
      dataio       images       lists        plot         system
      dbms         language     noao         softools     utilities
cl>
```

The list that appears before the **`cl>`** prompt indicates the options, either packages/menus or routines, available from this level. Each time you change levels, a list like the one above shows the options available in that level. IRAF changes the prompt to reflect the level. For example, if you type `dataio` at the **`cl>`** prompt, you would see the routines available in **`dataio`**, and the new prompt would be **`da>`**. **PlEASE NOTE: IRAF is case-sensitive!** Commands should be entered in lower case letters, as indicated here.

Investigators who choose to use IRAF are reminded that the data files must be in FITS format. See sections 4.3.8 and 5.5.5 for instructions on converting data objects into FITS format.

If you want to use SAOimage for your image display on the CGIS VMS workstation, you must spawn a separate SAOimage process from your IRAF session:

```
cl> !saosetup
cl> !spawn/nowait saoimage
```

An SAOimage process is automatically started on the CGIS ULTRIX workstation. You may need to end the SAOimage processes separately (clicking **`etc`**, then **`QUIT`**) when you have finished.

6.1.2 Exiting IRAF

From a lower level, *i.e.*, a prompt other than **cl>**, type `bye` to return to the next highest level. To exit IRAF completely, return to the **cl>** prompt via `bye`'s, and then type `logout`. This brings you back to **Other Analysis Tools...**.

6.1.3 Getting Help in IRAF

For help while in IRAF, type `help` at a prompt for a one line description of the tools available at that level. (Typing a `?` is equivalent to the word `help` in IRAF.) For example, typing `help` at the **cl>** prompt gives you the following one-liners:

```
      dataio - Data format conversion package (RFITS, etc.)
        dbms - Database management package (not yet implemented)
      images - General image processing package
    language - The command language itself
       lists - List processing package
       local - The template local package
        noao - The NOAO optical astronomy packages
    obsolete - Obsolete tasks
        plot - Plot package
       proto - Prototype or interim tasks
    softools - Software tools package
      system - System utilities package
   utilities - Miscellaneous utilities package
```

The IRAF **help** command also accepts an argument, *e.g.*, `help utilities`. If a package or menu name, say `dataio`, is the argument, IRAF lists the routines available in that package/menu with a one line description for each (similar to the list shown above). If a routine name is given as the argument, say `bintxt`, a text file is shown with information such as a description of the routine, its usage and parameters, cross-references, and possibly an example. If the help file is more than a screenful long, a status line at the bottom of the screen indicates how to move around in the file. These commands include:

```
            q :  quit
            d :  down one-half of a screen
  f or space :  down one full screen
   j or <CR> :  down one line
            N :  display the next help file (if more than one requested)
```

If you scroll all the way down to the bottom of the file, IRAF automatically dumps you out of help and back to the IRAF command prompt.

6.1.4 Canceling Commands in IRAF

Typing ^C interrupts your last command and returns you to an IRAF prompt.

WARNING! Typing ^Y will abort your IRAF session, but it may also cause an exit all the way out of the CGIS Executive, so you will lose not only your IRAF data, but also any UIMAGE, UIDL, or SAOimage data created in this session.

6.2 SAOIMAGE

SAOimage will run only on an X Windows terminal.

6.2.1 Entering SAOimage

As of this writing, the SAOimage package is available as a standalone only on the CGIS ULTRIX workstation. To start up SAOimage, choose **`Other Analysis Tools...`** from the **`CGIS Main Menu`**, then pick **`SAOimage`**. In the command window, you will see some initialization messages before the SAOimage window and sun logo appear.

6.2.2 Exiting SAOimage

To exit SAOimage, press <MB1> on the **`etc`** bar on the graphics screen. Then choose **`Quit`** at the end of the next row of choices. The SAOimage window disappears, and you will be back at the **`Other Analysis Tools...`** menu.

WARNING! The panic button ^Y returns you to the system prompt. Any data in SAOimage, UIMAGE, UIDL, or IRAF will be lost!!!